DMS-7380

Steel Non-Bridge Member Fabrication Plant Qualification

Effective Date: February 2015

1. DESCRIPTION

This Specification describes the qualification processes for fabrication plants producing steel non-bridge members listed in Article 3. of this Specification for Department projects. The phrase "steel non-bridge members" in this Specification includes aluminum roadway illumination poles and luminaire arms. Each fabrication plant must meet the requirements of this Specification and the requirements of the Department's *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*.

2. MATERIAL PRODUCER LIST

For the steel non-bridge members listed under Article 3., the Materials and Pavements Section of the Construction Division (CST/M&P) maintains the Material Producer Lists (MPLs) of fabrication plants conforming to the requirements of this Specification. Only steel non-bridge members, as listed in Article 3., produced by fabrication plants listed on the applicable MPL can be used on Department projects.

3. STEEL NON-BRIDGE MEMBERS

Steel non-bridge members include the following:

- roadway illumination poles and luminaire arms (steel and aluminum),
- high mast illumination poles,
- high mast ring and support assemblies,
- overhead sign support structures (monotube and truss type),
- traffic signal pole assemblies, and
- intelligent transportation system (ITS) poles.

4. QUALIFICATION PROCEDURE

4.1. **Qualification Request.** Submit a request for plant approval under DMS-7380 to DMS_Prequal@txdot.gov.

Requests must include the following in PDF format:

- company and fabrication plant name;
- physical and mailing addresses;
- contact person (management representative appointed by executive management per AISC), title, phone number, and email address;
- list of steel non-bridge members to be evaluated for qualification purposes;
- copy of American Institute of Steel Construction (AISC) certification Standard for Bridge and Highway Metal Component Manufacturers including a copy of the most recent complete audit report, exit meeting report, and written response to AISC of corrective actions for all specific discrepancies. The Engineer must approve any proposed deviation from AISC's certification recommendations or guidelines. All opportunities to make a choice in the AISC specifications and supporting documents must also be approved by the Engineer;

- list of on-site Quality Control (QC) personnel and a detailed description of their QC-related experience;
- copy of current AWS Certified Welding Inspector(s) (CWI) certifications for on-site QC welding inspection personnel;
- copy of welding procedure specifications (WPSs) and pertinent Procedure Qualification Records (PQRs), if applicable, in accordance with the AWS D1.1, Structural Welding Code - Steel. Identify each joint or joint type; and
- copy of written plant-specific QC and production procedures for members fabricated by welding or bolting. Submit QC and production procedures for each steel non-bridge member that includes cutting, bending, fitting, and assembly, welding, drilling, punching, shearing, machining, bolting, cleaning, and coating operations. The Engineer must approve any proposed deviations from AISC's certification recommendations and guidelines. All opportunities to make a choice in the AISC specifications and supporting documents must also be approved by the Engineer. Include procedures for permanently marking members with the plant's insignia or trademark at location(s) referenced in the pertinent Department specifications using a low stress stencil.

In addition to the items above, fabricators of high mast illumination poles must submit the following in PDF format:

- copy of the most recent Personnel Qualification and Certification Program in Nondestructive Testing (Written Practice), in accordance with the current Recommended Practice No. SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing," or in accordance with the current ASNT Standard ANSI/ASNT CP-189, "Qualification and Certification of Nondestructive Testing Personnel," published by the American Society for Nondestructive Testing, Inc. (ASNT); and
- list of all nondestructive testing (NDT) personnel and copy of the most recent Ultrasonic NDT certifications, in accordance with the applicable AWS code, for personnel performing and reviewing NDT. Administration of NDT Level I and II personnel certifications and approval of NDT test procedures must only be performed by current ASNT NDT Level III personnel certified in the specific method(s).

NOTE: Ultrasound technicians must pass a hands-on test administered by CST/M&P.

4.2. **Evaluation.** CST/M&P will review the qualification request documentation for all fabrication plants. If the qualification request includes the required information, CST/M&P will perform an initial Department-directed plant audit to ensure compliance with this Specification. The Department will evaluate all fabrication plants for adequate equipment, processes, organization, experience, knowledge, and competent personnel to produce acceptable work.

4.2.1. **Qualification.** If the required submittals and Department audit(s) verify compliance with this Specification, the Department will list the fabrication plant on the appropriate MPL(s). CST/M&P reserves the right to perform additional audits (announced or unannounced) at its discretion for a plant to remain on the MPL as an approved fabrication plant of steel non-bridge members.

Fabrication plants listed on the MPL must attain and promptly submit the following in order to maintain approval status:

- copy of current AISC certification Standard for Bridge and Highway Metal Component Manufacturers including a copy of the most recent complete audit report, exit meeting report, and written response to AISC of corrective actions for all specific discrepancies. The Engineer must approve any proposed deviation from AISC's certification recommendations or guidelines. All opportunities to make a choice in the AISC specifications and supporting documents must also be approved by the Engineer;
- current AWS CWI certifications for approved on-site QC welding inspection personnel, when changes occur;
- updated QC personnel list and a detailed description of their QC related experience as required by Section 4.1, when changes occur;
- current QC and Production procedures. Submit updated procedures when requesting changes to the approved version;

- updated WPSs and PQRs, when expired or changes occur;
- copy of the most recent Personnel Qualification and Certification Program in Nondestructive Testing (Written Practice), in accordance with the current ASNT Recommended Practice No. SNT-TC-1A or in accordance with the current ASNT Standard ANSI/ASNT CP-189, when changes occur; and
- updated NDT personnel list and copy of current applicable NDT certifications, in accordance with AWS D1.1, for approved personnel performing and reviewing NDT on high mast illumination poles. Administration of NDT Level I and II personnel certifications and approval of NDT test procedures must only be performed by current ASNT NDT Level III personnel certified in the specific method(s).

NOTE: Ultrasound technicians must pass a hands-on test administered by CST/M&P.

Include date of revision and highlighted changes on appropriate submittals. Failure to maintain and provide the above may result in removal from the MPL for applicable products.

Fabrication plants must also successfully complete any additional Department-directed audits and any follow-up plant audits by adequately implementing corrective actions for all deficiencies.

4.2.2. **Failure.** Plants that fail to qualify under this Specification may not furnish steel non-bridge members for Department projects and must show evidence of correction of all deficiencies before consideration for qualification.

4.3. **Random Inspection and Testing.** The Department reserves the right to inspect, sample, test, conduct random audits of plants, and review documentation at any time to ensure compliance with this Specification and other applicable specifications. Provide facilities and safe access to allow for inspection of materials, the process of fabrication, and the finished steel members. Coordinate the scheduling of any inspections that the Department requests to perform.

4.4. **Disqualification.** Any fabricator who fails to comply with the requirements of this Specification is subject to disqualification, which includes removal from the MPL. A disqualified fabricator is prohibited from furnishing product to Department projects and may not bid any work let during the disqualification period. The disqualification period will be a minimum of 30 days or as determined by CST/M&P.

Causes for disqualification include, but are not limited to:

- repetitive poor quality and workmanship,
- falsification of or incomplete documentation,
- lack of certified or qualified QC personnel, or
- certifying or furnishing product that does not meet specifications.

If a fabricator has been disqualified, all previously produced products will be subject to review and possible removal from assigned projects. If the Department disqualifies a fabricator, the Department may permit subcontracting pending product quantities for active projects to another Department-approved fabrication plant for the specific product.

4.5. **Re-Qualification.** Once the disqualification period established by CST/M&P has elapsed, the fabricator may begin the re-qualification process. The fabricator must pass an additional AISC and Department-directed audit and provide the Department with evidence of corrected deficiencies.

The fabricator must bear all Department expenses associated with re-qualification.

4.6. **Inactive Fabricator.** If a fabricator does not furnish any steel non-bridge members as defined in Article 3. to Department projects for a period of 2 years, CST/M&P may remove the fabricator from the MPL due to inactivity.

CST/M&P will consider future qualification after the fabricator indicates it will furnish steel non-bridge members to Department projects and is in compliance with this Specification.

5. QC PERSONNEL

Submit and receive Department approval for all changes to QC personnel prior to performing work.

5.1. **Qualifications.** Provide an adequate number of qualified QC personnel and qualified AWS CWI certified QC personnel for each specific operation detailed in the plant's QC and production procedures. Each plant must have a minimum of one CWI certified QC personnel during production. QC personnel must be on site working on the shop floor of the production areas and independent of production personnel, as determined by the Engineer. QC personnel must have the authority and management's support to make general inspection related decisions. QC personnel must be proficient in utilizing the applicable plans, specifications, and test methods, and in verifying compliance with the QC and production procedures.

QC personnel performing the duties specified in Section 5.2. are subject to Department approval.

5.2. **Responsibilities.** QC is solely the responsibility of the fabricator. The Department will not perform QC or act as a third-party witness for the fabricator. Perform the following activities, at a minimum, to ensure the quality and acceptability of fabricated products.

5.2.1. **Inspection.** QC personnel will follow approved procedures and verify correct processes for each member . QC personnel must ensure, at a minimum:

- correct materials utilized during fabrication and accurate material traceability;
- use of proper WPSs and properly certified welding personnel;*
- proper weld joint preparation and fit-up, and evaluation of welding in accordance with AWS D1.1;*
- finished welds comply with Contract requirements;*
- proper procedures for all cutting, shearing, machining, bending, straightening, surface preparation, and bolting;
- proper procedures for heat straightening of single weld seam shaft sections, when required;
- proper procedures for verifying member geometry and fit up including required assembly procedures for high mast ring and support assemblies and overhead sign support structures (monotube and truss type structures);
- proper NDT performed and evaluated in accordance with AWS D1.1 for high mast illumination poles;
- proper procedures for all repairs in accordance with QC and production procedures;*
- proper inspection and testing of coatings;
- legible marking of product with the plant's insignia or trademark at required locations; and
- proper procedures for handling, storage, and loading of members.

NOTE: * denotes inspections that must be performed only by CWI-certified QC personnel.

5.2.2. **Documentation.** Maintain the following documentation, at a minimum, available upon Department request, in accordance with AISC until the Department's final acceptance of the project and for a minimum of 7 years:

- Form 1818 (a.k.a. D-9-USA-1), "Material Statement," with supporting mill test reports (MTRs), certifications, and shipping invoices;
- fabrication drawings and approved shop drawings, when required;
- geometry and fit up worksheets, including assembly worksheets for overhead sign support structures;
- NDT reports for high mast illumination poles;
- galvanizing inspection reports to include thickness readings and final appearance assessments;
- paint coating inspection reports for application and final appearance coat compliance, include dry-film thickness test results for duplex systems (if applicable);

- signed certification statements indicating the coating (galvanizing and paint) was applied in accordance with Department specifications and the Contract Plans; and
- properly completed Department Form NB-2, "Steel Non-Bridge Member Worksheet DMS-7380."

5.2.3. **Certification of Product.** CWI QC personnel must certify product conformance with all plans and specifications and submit required documentation. This product certification includes the following, at a minimum:

- verification that product conforms with the approved shop drawings, if applicable, and all Contract requirements;
- signed Department Form NB-2 certifying that material, inspections, documentation, repairs (if applicable), and final product acceptance were properly performed and inspected;
- verification of proper electronic submission to the Department of Form 1818 (a.k.a. D-9-USA-1) with supporting mill test reports (MTRs) and certifications, and Department Form NB-2;
- permanent marking of members at required locations with the plant's insignia or trademark; and
- stamping of compliant members with the fabricator's approved monogram stamp. The fabricator's designated approval stamp must be Department approved and listed on the MPL prior to use.

6. NONCONFORMANCE REPORT

When the requirements of this Specification or applicable specifications are not met, submit a nonconformance report (NCR) to the Department for approval. Submit NCRs in accordance with Standard Specification Item 441.

Receive Department approval before beginning repairs. Perform all repair work in strict compliance with the approved NCR and repair procedure.